Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (previously presented) A method of demodulating multiple channels, comprising:

providing a first analog to digital converter having an analog input and a digital output;

providing a first plurality of digital demodulators, each demodulator having a programmable center frequency;

coupling a band of frequencies to the analog input of the first converter, the band including a first plurality of channels;

creating digitized samples of the band at the output of the first converter;

coupling the digitized samples to the plurality of demodulators;

demodulating a second plurality of channels from the band of frequencies;

maintaining pre-computed sets of filter coefficients in non-volatile storage, each set corresponding to one of multiple low-pass digital filters, each filter having one of a predetermined set of bandwidths;

selecting a first center frequency and first bandpass bandwidth for provisioning a first one of the first plurality of demodulators;

retrieving the filter coefficients associated with the first bandpass bandwidth;

subjecting the retrieved filter coefficients to a bandpass transformation corresponding to the first center frequency; and

loading the transformed filter coefficients into coefficient latches in the first demodulator.

2. (canceled)

3. (previously presented) The method of claim 1, further including:

operating the first demodulator at the first center frequency;

subsequent to said operating, loading the coefficient latches in the first demodulator with transformed coefficients corresponding to a second center frequency; and

operating the first demodulator at the second center frequency.

4. (previously presented) The method of claim 3, further including:

selecting a second center frequency and second bandpass bandwidth for provisioning a second one of the first plurality of demodulators, wherein said first and second bandpass bandwidths are unequal;

retrieving the filter coefficients associated with the second bandwidth;

subjecting the retrieved filter coefficients to a bandpass transformation corresponding to the second center frequency; and

loading the transformed coefficients into coefficient latches in the second demodulator.

5. (previously presented) The method of claim 1, wherein the first converter and the demodulators are located within the upstream section of a CMTS channel bank organized into upstream and downstream channels.

6. (previously presented) The method of claim 5, wherein the ratio of the number of upstream channels demodulated by the CMTS channel bank to a number of upstream input connectors of the CMTS channel bank is M.

7. (original) The method of claim 6, wherein M is 16.

8. (previously presented) The method of claim 1, wherein the first converter, the demodulators, and the non-volatile storage are implemented on a single integrated circuit.

9. (previously presented) The method of claim 5, wherein the CMTS channel bank is organized using a plurality of modules, each module having a plurality of downstream channels and a plurality of upstream channels.

10. (previously presented) The method of claim 9, wherein a number of the upstream channels is 4 times a number of the downstream channels.

11. (canceled)

12. (previously presented) The method of claim 5, wherein the CMTS channel bank has 4 times as many upstream channels as downstream channels.

13. (original) The method of claim 5, wherein the CMTS is DOCSIS compatible.

14. (original) The method of claim 5, wherein the upstream channels are in the 750-1000 MHz portion of the spectrum.

15. (original) The method of claim 14, wherein at least one frequency stacker is used to densely pack each sub-band of the 750-1000 MHz spectrum portion.

16. (previously presented) The method of claim 1, wherein each of the demodulators uses an FIR digital filter.

17. (original) The method of claim 16, wherein each FIR filter is an Optimum Equiripple Linear-Phase filter.

18-21. (canceled)

22. (previously presented) The method of claim 1, wherein a number of the filter coefficients for each filter is at least 16.

23. (previously presented) The method of claim 1, wherein a number of the filter coefficients for each filter is at most 24.

24. (previously presented) A system for demodulating multiple channels,

comprising:

a first analog to digital converter having an analog input and a digital output;

a first plurality of digital demodulators, each demodulator having a programmable center frequency;

means for coupling a band of frequencies to the analog input of the first converter, the band including a first plurality of channels;

means for creating digitized samples of the band at the output of the first converter;

means for coupling the digitized samples to the plurality of demodulators;

means for demodulating a second plurality of channels from the band of frequencies;

means for maintaining pre-computed sets of filter coefficients in non-volatile storage, each set corresponding to one of multiple low-pass digital filters, each filter having one of a predetermined set of bandwidths;

means for selecting a first center frequency and first bandpass bandwidth for provisioning a first one of the first plurality of demodulators;

means for retrieving the filter coefficients associated with the first bandpass bandwidth;

means for subjecting the retrieved filter coefficients to a bandpass transformation corresponding to the first center frequency; and

means for loading the transformed filter coefficients into coefficient latches in the first demodulator.

25. (previously presented) The system of claim 24, further including:

means for operating the first demodulator at the first center frequency;

means for loading, subsequent to said operating, the coefficient latches in the first demodulator with transformed coefficients corresponding to a second center frequency; and

means for operating the first demodulator at the second center frequency.

26. (previously presented) The system of claim 25, further including:

means for selecting a second center frequency and second bandpass bandwidth for provisioning a second one of the first plurality of demodulators, wherein said first and second bandpass bandwidths are unequal;

means for retrieving the filter coefficients associated with the second bandwidth;

means for subjecting the retrieved filter coefficients to a bandpass transformation corresponding to the second center frequency; and

means for loading the transformed coefficients into coefficient latches in the second demodulator.

27. (previously presented) The system of claim 24, wherein the first converter and the demodulators are located within the upstream section of a CMTS channel bank organized into upstream and downstream channels.

28. (previously presented) The system of claim 27, wherein the ratio of the number of upstream channels demodulated by the CMTS channel bank to a number of upstream input connectors of the CMTS channel bank is M.

29. (previously presented) The system of claim 28, wherein M is 16.

30. (previously presented) The system of claim 27, wherein the CMTS channel bank is organized using a plurality of modules, each module having a plurality of downstream channels and a plurality of upstream channels.

31. (previously presented) The system of claim 30, wherein a number of the upstream channels is 4 times a number of the downstream channels.

32. (previously presented) The system of claim 27, wherein the CMTS channel bank has 4 times as many upstream channels as downstream channels.

33. (previously presented) The system of claim 27, wherein the CMTS is DOCSIS compatible.

34. (previously presented) The system of claim 27, wherein the upstream channels are in the 750-1000 MHz portion of the spectrum.

35. (previously presented) The system of claim 34, wherein at least one frequency stacker is used to densely pack each sub-band of the 750-1000 MHz spectrum portion.

36. (currently amended) The system of claim 24, wherein the first converter, the

demodulators, and the non-volatile storage~~[[,]]~~ are implemented on a single integrated circuit.

37. (previously presented) The system of claim 24, wherein each of the demodulators uses an FIR digital filter.

38. (previously presented) The system of claim 16, wherein each FIR filter is an Optimum Equiripple Linear-Phase filter.

39. (previously presented) The system of claim 24, wherein a number of the filter coefficients for each filter is at least 16.

40. (previously presented) The system of claim 24, wherein a number of the filter coefficients for each filter is less than or equal to 24.